## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve aSB211 .P8P6

# **POTATOES**

CLASSIFICATION AND IDENTIFICATION OF VARIOUS DISORDERS





UNITED STATES DEPARTMENT OF AGRICULTURE FRUIT AND VEGETABLE QUALITY DIVISION FRESH PRODUCTS BRANCH

AD-33 Bookplate

## NATIONAL



LIBRARY

## U.S. DEPT OF FABILEROF CONTENTS

TVED	Picture Number	Page
SET 2 8 1982		
OKCER UNIT		
BASIC REQUIREMENTS		
Not shriveled or flabby Not seriously shriveled or flabby	1 2	1
Cleanness Clean Fairly clean	3-4 5-6 7-8	2 3 4
Slightly dirty  Not seriously damaged by dirt  Shape	9-10	5
Well shaped Fairly well shaped Not seriously misshapen	11-13 14-17 18-22	6 7-8 8-9
Skinning Practically no skinning Slightly Skinned Moderately Skinned Badly Skinned	23 24 25 26	10 10 11
Free from defects Blackheart	27-28	12
Freezing Dry type Internal Wet breakdown - leaking Late Blight Tuber Rot Bacterial Ring Rot Southern Bacterial Wilt Bacterial Soft Rot	.29 30 31 32-34 35-36 37-38 39	12 13 13 13-14 14-15 15
IDENTIFICATION  Alternaria Rot (Early Blight) Blackleg Charcoal Rot Corky Ring Spot Enlarged lenticels (coalesced) Enlarged lenticels (raised) Flea Beetle Fusarium Tuber Rot Glassy End Rot (Jelly End Rot) Grass Greening Grub	40-41 42-43 44-45 46-47 48 49 50 51 <sub>7</sub> 52 53 54 55	17 17-18 18 19 19 20 20-21 21 21 22 22

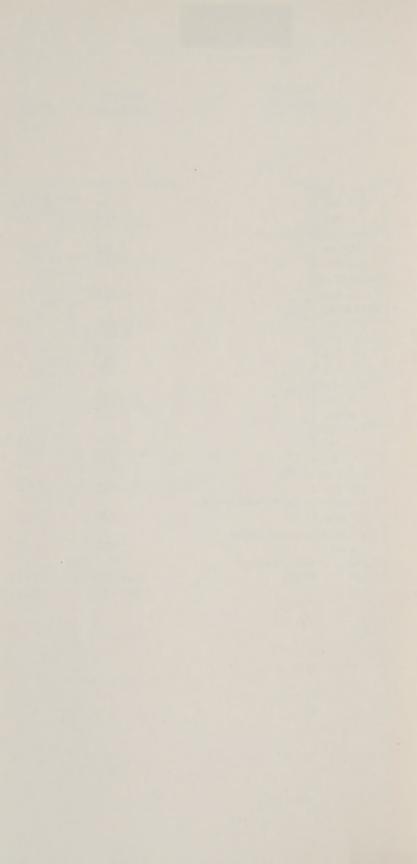
	Picture Number	Page
	**************************************	
Host or water damage		
Heat or water damage Ingrown sprouts	58-59 60-61	23
Internal Black Spot	62	23-24
Internal Brown Spot	63-64	24-25
Leak	65-66	25
Mahogany Browning	67-68	26
Nematode	69	26
Net Necrosis	70-71	27
Pink Eye	72-74	27-28
Pink Rot	75-76	28-29
Rodent damage	77	29
Scab, surface	78	29
Sclerotium Rot	79-80	30
Silver Scurf	81-82	30-31
Skin spots Stem End Browning	83-84 85	31
Sunburn	86-87	32
Tuber Moth	88-89	33
Vascular discoloration	90-91	33-34
Worm damage	92-93	34
CLASSIFICATION OF DEFECTS		
Aircracks		
U.S. No. 1	94-95	35
U.S. No. 2	96	35
Bruises		
U.S. No. 1	97	36
U.S. No. 2	98-99	36
Cuts	400 404	37
U.S. No. 1	100-101 102-104	38-40
U.S. No. 2 Enlarged lenticels	102-104	00 40
U.S. No. 1	105-106	41
U.S. No. 2	107	41
External discoloration		
U.S. No. 1	108-111	42-43
U.S. No. 2	112-113	43
Folded end		4.4
U.S. No. 1	114-115	44-45
U.S. No. 2	116-117	44-40
Growth cracks	118	45
U.S. No. 1	119-120	45-46
U.S. No. 2	119-120	

1 1877 S 8 8 7 1 1

1.65

## 

	Picture Number	Page
Hollow Heart		
U.S. No. 1	121	46
U.S. No. 2	122	46
Internal discoloration	400	
U.S. No. 1	123	47
U.S. No. 2	124	47
Rhizoctonia U.S. No. 1	125-126	47-48
Russeting	120-120	47-40
U.S. No. 1	127-128	48
Scab, pitted	127 120	40
U.S. No. 1	129	49
U.S. No. 2	130	49
Second growth		
U.S. No. 1	131-132	50
U.S. No. 2	133	51
Skin checks		
U.S. No. 1	134	52
U.S. No. 2	135	52
Sprouts (clusters) U.S. No. 1	404	52
Flattened or depressed areas	136	52
U.S. No. 1	137	53
Sunken discolored areas	107	00
U.S. No. 2	138	53
Surface cracks (netting)		
U.S. No. 1	139-140	53-54
U.S. No. 2	141-142	54

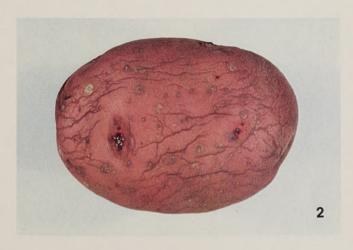


#### **BASIC REQUIREMENTS**

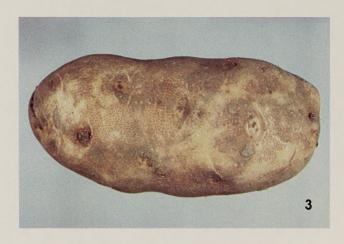
#### **FIRMNESS**



Not shriveled or flabby U.S.No. 1 — maximum allowed



Not seriously shriveled or flabby U.S.No. 2 — maximum allowed



Clean (dry) — maximum allowed \*



Clean (wet) — maximum allowed \*

<sup>\*</sup> Equal amount or less allowed on opposite side.

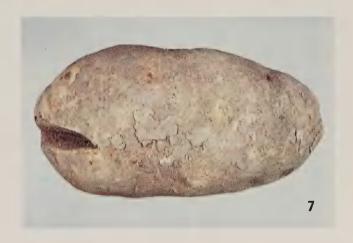


Fairly clean (dry) — maximum allowed\*



Fairly clean (wet) — maximum allowed \*

<sup>\*</sup>Equal amount or less allowed on opposite side.

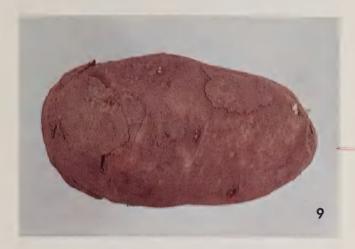


Slightly dirty (dry) \*
U.S. No. 2 — not fairly clean



Slightly dirty (wet) \* U.S. No. 2 — not fairly clean

<sup>\*</sup> Equal amount or less allowed on opposite side.

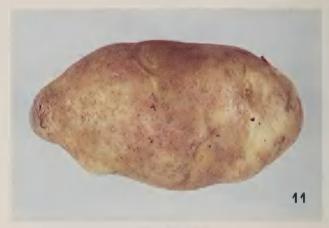


Not seriously damaged by dirt U.S. No. 2 — maximum allowed



Not seriously damaged by dirt U.S.No. 2 — maximum allowed

10



Well shaped U.S. Extra No. 1 - maximum allowed



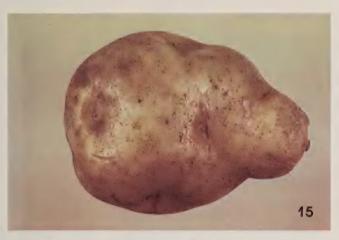
Well shaped U.S. Extra No. 1 - maximum allowed



Well shaped U.S. Extra No. 1 - maximum allowed



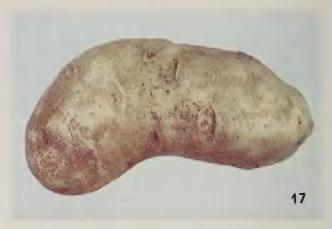
Fairly well shaped U.S. No. 1 - maximum allowed



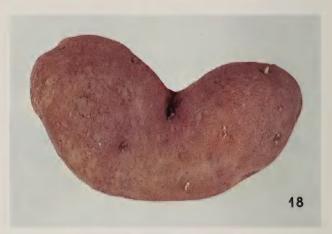
Fairly well shaped U.S. No. 1 - maximum allowed



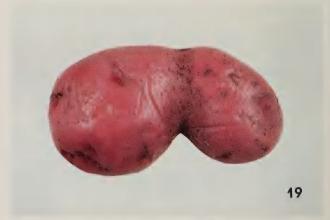
Fairly well shaped U.S. No. 1 - maximum allowed



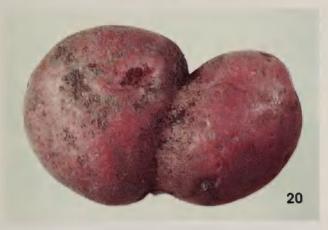
Fairly well shaped U.S. No. 1 — maximum allowed



Not seriously misshapen U.S. No. 2 — maximum allowed



Not seriously misshapen U.S. No. 2 - maximum allowed



Not seriously misshapen U.S. No. 2 - maximum allowed



Not seriously misshapen U.S. No. 2 - maximum allowed



Not seriously misshapen U.S. No. 2 - maximum allowed

#### SKINNING CLASSIFICATIONS



Practically no skinning \*



Slightly skinned\*

<sup>\*</sup> Equal amount or less allowed on opposite side.

#### SKINNING CLASSIFICATIONS



Moderately skinned\*



Badly skinned\*

<sup>\*</sup> Equal amount or less allowed on opposite side.

FREE FROM DEFECTS

Any amount scored against all grades.



Blackheart



Blackheart



Freezing injury (dry type)

FREE FROM DEFECTS
Any amount scored against all grades.



Freezing injury (internal)



Freezing injury (wet-leaking)

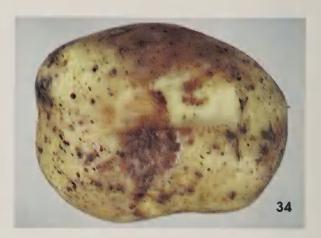


Late Blight Tuber Rot

FREE FROM DEFECTS
Any amount scored against all grades.



Late Blight Tuber Rot



Late Blight Tuber Rot



Bacterial Ring Rot

FREE FROM DEFECTS

Any amount scored against all grades.



Bacterial Ring Rot



Southern Bacterial Wilt (Brown Rot)



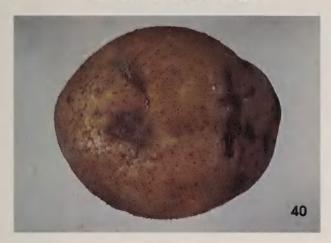
Southern Bacterial Wilt (Brown Rot)

#### FREE FROM DEFECTS

Any amount scored against all grades.



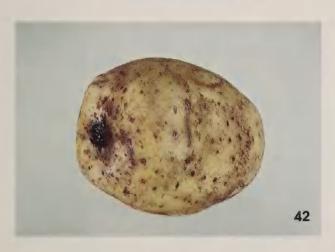
Bacterial Soft Rot (Slimy Soft Rot)

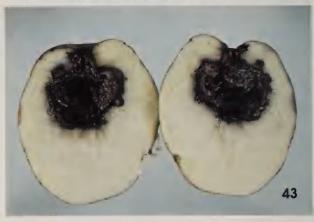


Alternaria Tuber Rot (Early Blight)

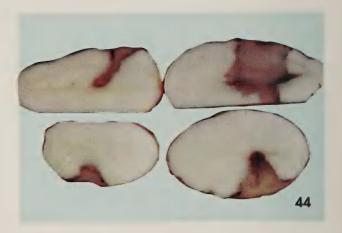


Alternaria Tuber Rot (Early Blight)





Blackleg



Charcoal Rot



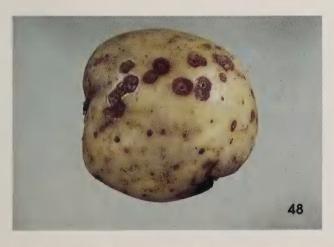
Charcoal Rot



Corky Ring Spot



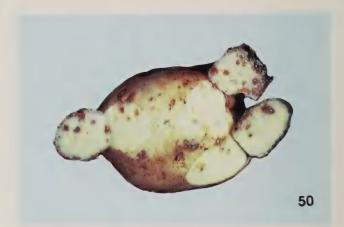
Corky Ring Spot



Enlarged lenticels (coalesced)



Enlarged lenticels (raised)



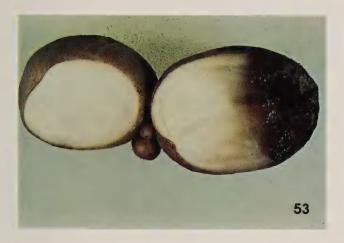
Flea Beetle



Fusarium Tuber Rot



Fusarium Tuber Rot



Glassy End Rot (Jelly End Rot)



Grass



Greening



Grub



57

Grub

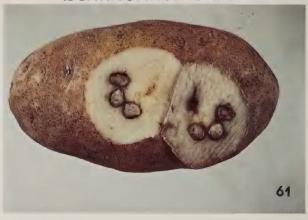


Heat or water damage

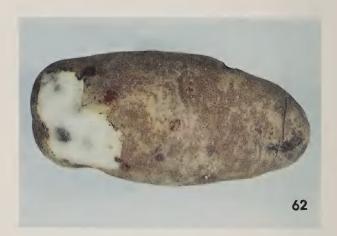


Heat or water damage

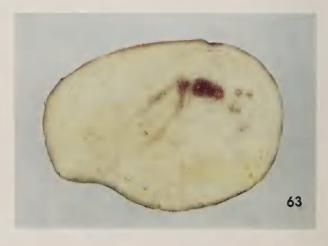




Ingrown sprouts



Internal Black Spot



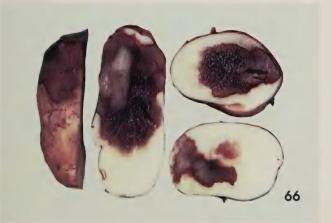
Internal Brown Spot



Internal Brown Spot

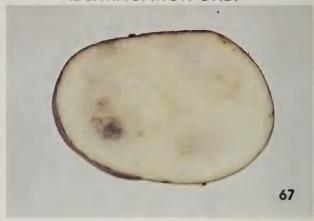


Leak



Leak

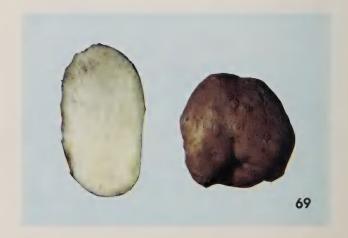
**IDENTIFICATION ONLY** 



Mahogany Browning



Mahogany Browning

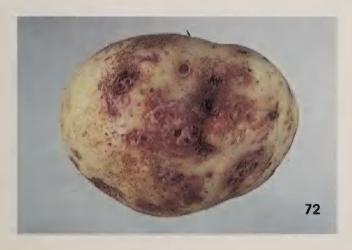




Net Necrosis



Net Necrosis



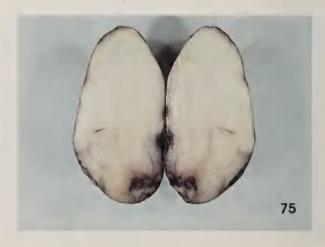
Pink Eye



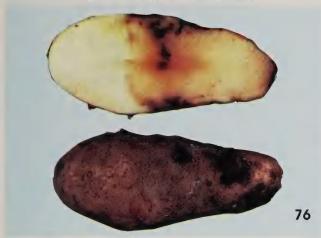
Pink Eye



Pink Eye



Pink Rot



Pink Rot



Rodent damage



Scab, surface

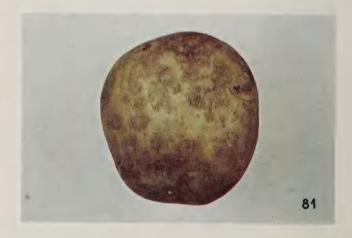


79

Sclerotium Rot



Sclerotium Rot



Silver Scurf



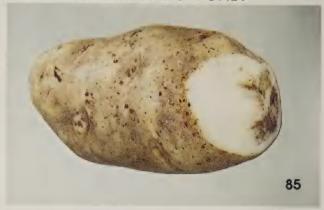
Silver Scurf



Skin spots



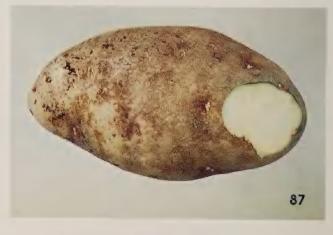
Skin spots



Stem End Browning

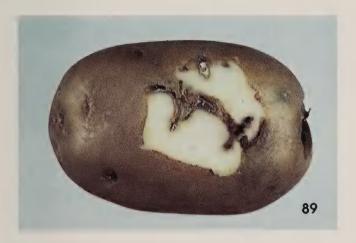


Sunburn





**Tuber Moth** 



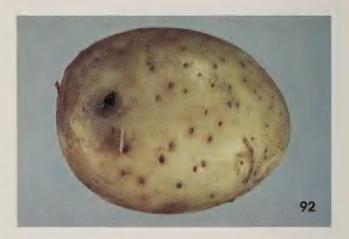
**Tuber Moth** 



Vascular discoloration



Vascular discoloration



Worm damage



Worm damage

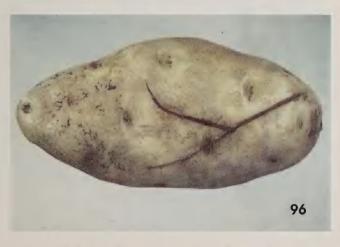
## CLASSIFICATION OF DEFECTS AIR CRACKS



U.S. No. 1 — maximum allowed

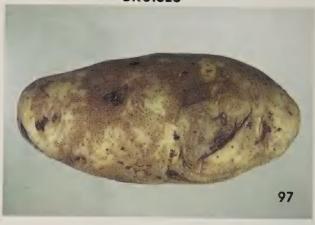


U.S. No. 1 — maximum allowed



U.S. No. 2 — maximum allowed

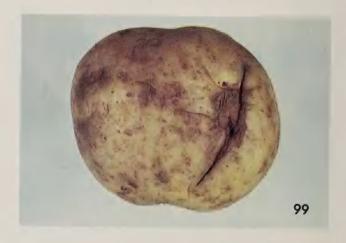
#### CLASSIFICATION OF DEFECTS BRUISES



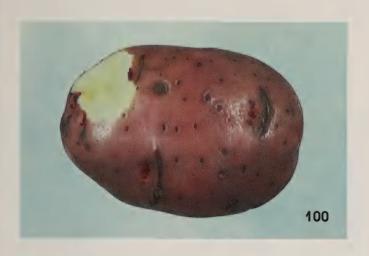
U.S. No. 1 — maximum allowed



U.S. No. 2 — maximum allowed



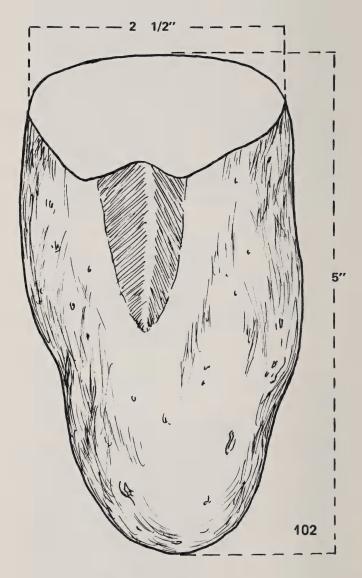
U.S. No. 2 — maximum allowed



U.S. No. 1 — maximum allowed

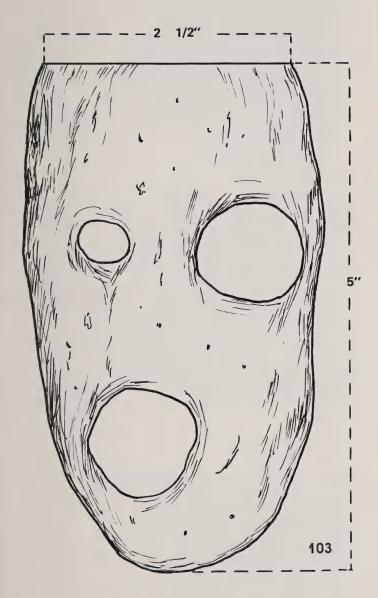


U.S. No. 1 — maximum allowed



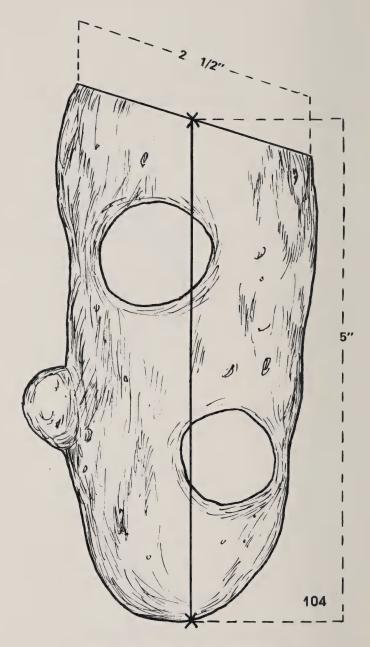
U.S. No. 2 — maximum allowed

Illustration showing the extent a long type potato with one clipped end may be affected by growth cracks.



U.S.No. 2 — maximum allowed

Illustration showing the extent a long type potato with one clipped end may be affected by clipped knobs.



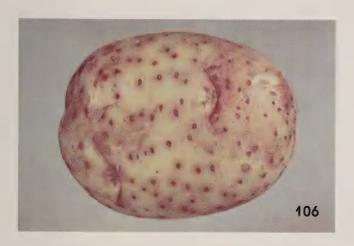
U.S. No. 2 - maximum allowed

Illustration showing "average length" on a tuber with a diagonal cut.

#### CLASSIFICATION OF DEFECTS ENLARGED LENTICELS



U.S. No. 1 — maximum allowed\*



U.S. No. 1 — maximum allowed \*



U.S. No. 2 — maximum allowed \* \* Equal amount or less allowed on opposite side.

### CLASSIFICATION OF DEFECTS EXTERNAL DISCOLORATION



U.S. No. 1 — maximum allowed

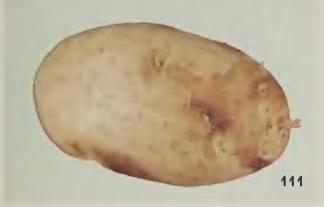


U.S. No. 1 — maximum allowed



U.S. No. 1 — maximum allowed \* \* Equal amount or less allowed on opposite side.

## CLASSIFICATION OF DEFECTS EXTERNAL DISCOLORATION



U.S. No. 1 — maximum allowed\*



U.S. No. 2 — maximum allowed \*



U.S. No. 2 — maximum allowed \* Equal amount or less allowed on opposite side.

#### CLASSIFICATION OF DEFECTS FOLDED END



U.S. No. 1 — maximum allowed



U.S. No. 1 — maximum allowed



U.S. No. 2 — maximum allowed

## CLASSIFICATION OF DEFECTS FOLDED END



U.S. No. 2 — maximum allowed **GROWTH CRACKS** 



U.S. No. 1 — maximum allowed



U.S. No. 2 — maximum allowed

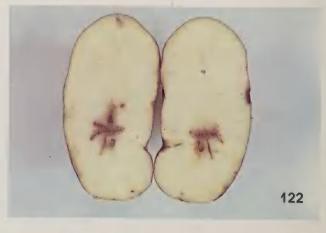
## CLASSIFICATION OF DEFECTS GROWTH CRACKS



U.S. No. 2 — maximum allowed **HOLLOW HEART** 

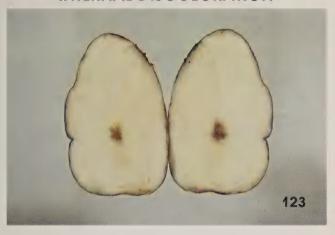


U.S. No. 1 — maximum allowed



U.S. No. 2 - maximum allowed

## CLASSIFICATION OF DEFECTS INTERNAL DISCOLORATION



U.S. No. 1 — maximum allowed



U.S. No. 2 — maximum allowed **RHIZOCTONIA** 



U.S. No. 1 — maximum allowed \*
\*Equal amount or less allowed on opposite side.

#### CLASSIFICATION OF DEFECTS RHIZOCTONIA



,\_\_

U.S.No. 1 — maximum allowed \* **RUSSETING**(for non-russet type potatoes)

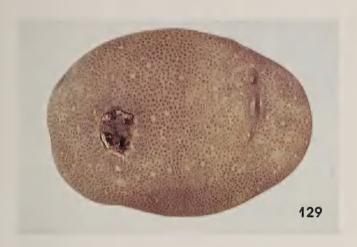


U.S. No. 1 — maximum allowed \*



U.S. No. 1 — maximum allowed \* \* Equal amount or less allowed on opposite side.

# CLASSIFICATION OF DEFECTS SCAB, PITTED

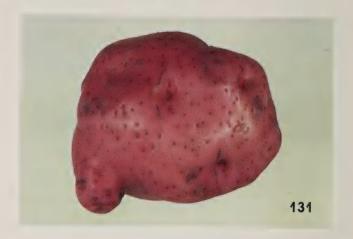


U.S. No. 1 — maximum allowed

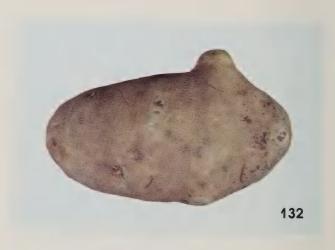


U.S. No. 2 — maximum allowed

## CLASSIFICATION OF DEFECTS SECOND GROWTH



U.S. No. 1 — maximum allowed



U.S. No. 1 — maximum allowed

## CLASSIFICATION OF DEFECTS SECOND GROWTH



U.S. No. 2 — maximum allowed

## CLASSIFICATION OF DEFECTS SKIN CHECKS



U.S. No. 1 — maximum allowed \*



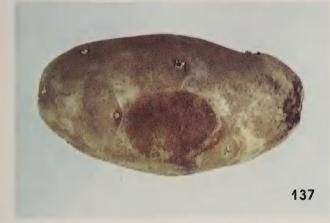
U.S.No. 2 — maximum allowed \*

#### SPROUTS, CLUSTERS



U.S.No. 1 — maximum allowed \* Equal amount or less allowed on opposite side.

## CLASSIFICATION OF DEFECTS FLATTENED OR DEPRESSED AREAS



U.S. No. 1 — maximum allowed **SUNKEN DISCOLORED AREAS** 



U.S. No. 2 — maximum allowed **SURFACE CRACKS** 



U.S. No. 1 — maximum allowed

### CLASSIFICATION OF DEFECTS SURFACE CRACKS



U.S. No. 1\*

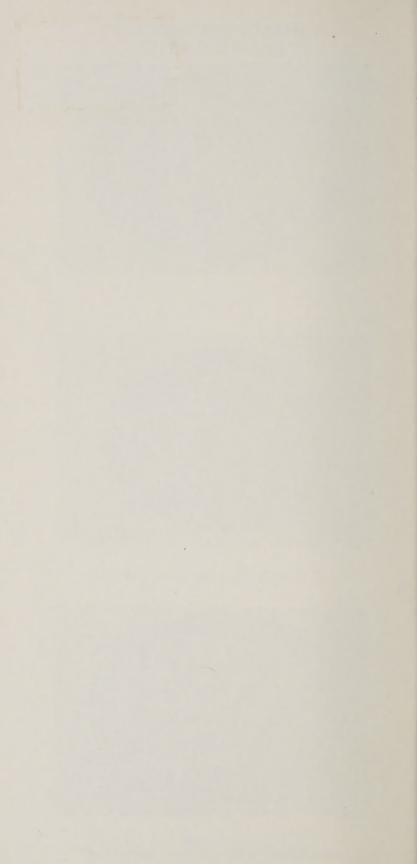


U.S. No. 2 — maximum allowed \*



U.S. No. 2 — maximum allowed Equal amount or less allowed on opposite side.

This Book Available Through
The John Henry Co.
P. O. Box 1799
Lansing, MI 48901
or
United Fresh Fruit and
Vegetable Association
N. Washington at Madison
Alexandria, Virginia 22314





R0000 930051



This Visual Aid Prepared By The
UNITED STATES DEPARTMENT OF AGRICULTURE
FRESH PRODUCTS BRANCH
In Cooperation With
UNITED FRESH FRUIT AND VEGETABLE ASSOCIATION
In Consultation With
HORTICULTURAL SCIENCE INSTITUTE
SCIENCE AND EDUCATION ADMINISTRATION — AGRICULTURAL RESEARCH